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EXTENT OF DEVELOPMENT OF FARM WOMEN THROUGH AGRICULTURAL TECHNOLOGY MANAGEMENT AGENCY (ATMA) PROJECT – A STUDY IN KHORDHA DISTRICT OF ODISHA

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ABSTRACT

The present study entitled "**Extent of development of farm women through Agricultural Technology Management Agency (ATMA) project - A study in Khordha district of Odisha"** was undertaken with a view to analyse the socio-economic background of the farm women followed by assessing their level of knowledge, their participation in various ATMA reform activities, to assess the development occurred as well as constraints perceived by them through ATMA activities. Both purposive and random sampling procedure was followed for selection of district, block, panchayat and villages. The total sample size is 120. The response was obtained from each individual respondent through pre-tested structured interview schedule prepared for the collection of data. The collected data was tabulated and analysed with use of suitable statistical tools and techniques such as percentage, mean score, rank order, coefficient of correlation, regression analysis, step wise regression etc. The findings of the study revealed that majority of the respondents were middle aged group i.e. 55 percent respondents belonged to middle aged group and with education up to primary school i.e. (30%). Majority (67.5%)of the respondents belonged to nuclear family and family size below 5 members i.e. (70%). Most of the respondents belonged to marginal farmer category (87%). Majority of the respondents had medium level membership (75%), medium social participation (77.5%), medium level cosmopoliteness (57.5%) medium level mass media exposure (77.5%). Most of the respondents had semi-pucca house i.e. (65%) and belonged to medium income category i.e. (50%). The co-rrelation analyses among all the socio-economic variables have significant correlation with each other. The comparative analysis that majority of the respondents had good knowledge on blending of traditional and modern cultivation practices with highest mean score of 2.97 followed by various training programmes under ATMA 2.87. The co-rrelation analyses on knowledge level higher education, nuclear family type positively affect or increase the knowledge level of the respondents. It was observed that majority of members had medium level of interest and motivation (65%), medium decision making capacity (72%),medium level group cohesiveness (67.5%) low level participation(52.5%) . The co-rrelation analysis on extent of participation revealed that smaller size of family having less cosmopoliteness were the motivating factors for increasing the extent of participation of respondents. The multiple-regression analysis on extent of development revealed that the socio-economic variables of the respondents had much influence in increasing development level of respondents. Economic constraint was the major constraint perceived by the respondent. The multiple regression analysis revealed that the socio-economic variables had much influence in contributing towards constraints of the respondents. In order to make the farm women information rich and to boost agricultural production the recommendation of complex technologies should be avoided and it should be always need based. ATMA functionaries should make awareness campaighns, skill trainings and exposure visits for the overall development of farm women.

KEYWORDS: Extent of development of Farm Women, Socio-economic Variables, ATMA

INTRODUCTION

In our country most of the women earn a little from agriculture sector which provide employment to two-third population of our country, they generally referred to as farm women and farm women are generally those whose major gainful employment is in farming operations. Farm women are categorized into 3 types.

- Women agricultural labourer who devote her time working in other's farm.
- Women as decision maker in the family who work in her own farm and is cultivator of that farm.
- Women belong to farm family.

In this study the first two categories of farm women were selected as respondents of the study.

Why the Study is Taken

The study is to analyse the extent of development of farm women through the government of India's latest bottom-up approach ATMA (Agricultural Technology Management Agency) here development is a broad term and it encompasses social, cultural, economical and technological development. Sustainable women development refers to a development process which enhances farm women's capacity to create and consume wealth on a lasting basis. Sustainable women development requires, among other things, a socio-economic, political and cultural environment which enables farm women to engage in and sustain the development process.

The scenario of farm women development in odisha.

Odisha is an agrarian state. Mostly two-third of its population depends upon agriculture for their livelihood. Due to illiteracy and backwardness the women are not aware about their rights at all. The World Bank has suggested that development of women should be a key aspect of all social development programs. Women's equality and empowerment are seen as central to a more holistic approach towards establishing new patterns and processes of development that are sustainable.

- The Policy Framework for Agriculture Extension (PFAE) and experiences under ATMA approach have also been directed towards similar strategies and a new scheme by the name "Support to State Extension Programmes for Extension Reforms**"** is now being implemented in all the 588 districts of the country. Against this background a study has been undertaken entitled" Extent of development of farm women through Agricultural Technology Management Agency (ATMA) project –A study in Khordha district of Odisha" on the following objectives.

- To study the socio -economic profile of farm women involved under ATMA project.
- To assess the knowledge level of farm women towards functioning of ATMA and WIG.
- To assess the extent of participation of the farm women in extension reforms activities under ATMA.
- To assess the extent of development of farm women through extension reform activities of ATMA project.
- To identify constraints experienced by farm women in performing their respective roles under reformative measures of ATMA project

Scope of the Study

- The findings of the study will be a great help to the administrators, planners, policy makers and developmental staff of the state and central government in identifying directions, achievements, inadequacies and problems of the project.
- The state directorate of agriculture and other staff working under this system will find clue to the weaknesses of the system, thus the findings of the study would be immense value for the administrators and planners to modify and to bring necessary addition and alternations in the existing project.
- The suggestions emerge from the study will enable the implementing agency for establishing both forward and backward linkages with the stakeholders for better output over and above the study and will substantially contribute to the growth and development of the farm women in the state.

Review of Literature

(Krishnaraj,2011, Cleaver, 1998, Meinzen- Dick and Zwarteveen, 1998).stated that despite of their important involvement in agriculture and their multiple uses of agricultural water, women's participation in WMOs has been low.

Dhaka et. al, 2012) stated that Women participation in agriculture will be acknowledged when women farmer will actively participate to build and improve their knowledge and gain access to new and necessary information to make use of most of them in their farming activities. By linking the knowledge and information flow amongst women socio economic progress can be achieved.

Unati et.al, (2011).stated that Overall the level of involvement of women in farm decision making was found very medium. The extent of involvement and decision making in activities like intercultural operations is48 percent in harvesting of crops 45.33 percent, storage of farm produce is 42.67 percent; 42.00 percent in sale of farm produce and in subsidiary occupation like animal husbandry and dairy business is 38.67 percent and financial management is 36 percent only.

Ghosh (1995) observed that group cohesiveness refers to the ability of the group to relate emotionally to each other and to the given task so as to integrate with each other effectively for achieving the common goals. He suggested that cohesiveness takes care of social, emotional and functional interaction among group members, which ultimately lead the group to substantial achievement even in the absence of individual excellence within the group. He found that for enhancing the group cohesiveness it is necessary that educational status of women members must be raised.

Research Methodology

Research design

"Ex-post facto and survey research design" was employed in the present research study as the events have already occurred and design was considered appropriate. Multistage randomsampling was adopted to select the districts block and villages under the study.

Locale of the Study

The study was conducted in one block viz. Begunia in khordha district of Odisha. Total 120 no of respondentswere taken randomly for data collection.

RESULT AND DISCUSSIONS

Here authors are interested for Concentrating on Discussion about Second and third Objectives and the details are discussed below.

Assessing Knowledge Level of the Respondents on Training Programmes

Here an attempt has been made in the chapter to analyse the knowledge level of the respondents on various ATMA project related activities. The response on knowledge level of the respondents were analyzed and presented in the table below.

Table 1: Knowledge Level of Respondents on Training Programme

SI NO	Statements	Mean Score	Gap%
Kno.1	various training programmes under ATMA	2.875	4.167
Kno2	Membership in committees under ATMA	1.925	35.833
Kno3	exposure visit by ATMA functionaries with WIG	2.125	29.167
Kno4	Contact with officials of ATMA	2.325	22.500
Kno5	maintaining social relationship with other group like commodity focused group, FIG etc	2.375	20.833
Kno6	Adaption of new technologies	2.475	17.500
Kno7	Scientific cultivation	2.175	27.500
Kno8	Testing of new technologies	2.850	5.000
Kno9	Farm mechanisation	2.875	4.167
Kno10	Blending of traditional and modern cultivation practices	2.975	0.833
Kno11	Integrated farming approach	2.100	30.000
Kno12	Co-operative farming	1.225	59.167
Kno13	Contract farming	1.400	53.333
Kno14	Training regarding adequate farm investment	2.425	19.167
Kno15	Knowledge given on availing credit by the group	2.750	8.333
Kno16	Knowledge given to groups on optimum use of available resources	2.650	11.667
Kno17	Understanding usefulness of commercial farming	2.150	28.333
Kno18	Training on various alternate livelihood system	2.150	28.333
Tot.Kno		41.825	11.011

Altogether eighteen knowledge domains were considered. The mean score for each knowledge related aspect was

calculated. It was observed that majority of the respondents had good knowledge on blending of traditional and modern cultivation practices with highest mean score of 2.97 followed by various training programmes under ATMA 2.87, farm mechanisation 2.87, testing of new technologies 2.85,knowledge on availing credit by the group 2.75,knowledge given on optimum use of available resources 2.65 , adoption of new technologies 2.47, on farm investment 2.42, knowledge on other WIG 2.37, knowledge on contact with officials 2.32, knowledge on scientific cultivation 2.17 knowledge on commercial farming and alternate livelihood system both having mean score of 2.15, knowledge gain by exposure visit 2.12,knowledge on integrated farming approach 2.10, knowledge on members with committees of ATMA 1.92,knowledge on contract farming 1.40, and knowledge on co-operative farming is 1.22 .

The analysis of knowledge gap indicates that among the respondents the knowledge gap was maximum in case of co-operative farming of 59.16 percent followed by knowledge gap on contract farming 53.33 percent, knowledge gap on members with committees of ATMA 35.83 percent, knowledge gap on integrated farming approach 30 percent whereas the lowest knowledge gap was in blending of traditional and modern cultivation practices.

From the above analysis it is concluded that knowledge gap on co-operative farming and contract farming can be minimized through skill oriented training programmes, various successful case studies may also be cited to the respondents for motivation and adoption. Through ATMA demonstrations and exposure visits of farm women can also enrich their knowledge level and motivate them to adopt in their own situation to improve their socio-economic status.

Table 2: Correlation Study of Socio Economic Variables with Knowledge Level Of Respondents

SL.NO	Variables	r-value
1	Age	-.163
2	Education	.367**
3	Fam.Type	.252**
4	Fam.Size	.178
5	Land Holding	.339**
6	Membership	.187*
7	Soc. Part	.061
8	Cosmo	.380**
9	Media	.578**
10	Housing Pat	.058
11	Mater. Poss	.378**
12	Income	.246**

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed

As revealed from the table age, family size, social participation, housing pattern were the variables found to have no influence in increasing knowledge level. Whereas education (.367**), family type (.252**), land holding pattern (.339**), membership of social organisation (.187*), cosmopoliteness(.380**), mass media exposure(.578**), material possession(.378**), income of the respondents(.246**) exhibited positive and significant influence on increasing the knowledge level of respondents. The findings therefore concludes that the attributes like higher education, nuclear family type positively affect or increase the knowledge level of the respondents similarly according to the results medium level of membership, cosmopoliteness, mass media exposure exhibited positive effect or helped in increasing the knowledge level of respondents. Besides that annual income and required amount of agricultural and household material availability helped in increasing the knowledge level of the respondents.

Table 3: Multiple Regression Analysis of Socio Economic Variables on Knowledge Level

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	29.352	3.024		9.706	.000
	Age	-.176	.391	-.034	-.451	.653
	Education	.503	.284	.185	1.774**	.079
	Fam.Type	.776	.487	.194	1.593	.114
	Fam.Size	.000	.713	.000	.000	1.000
	Land Holding	1.382	.782	.148	1.766**	.080
	Membership	-.166	.165	-.083	-1.005	.317
	Soc. Part	-.172	.146	-.084	-1.179	.241
	Cosmo	.226	.138	.164	1.636	.105
	Media	.729	.096	.768	7.576**	.000
	Housing Pat	-1.633	.495	-.323	-3.300**	.001
	Mater. Poss	-.227	.200	-.116	-1.135	.259
	Income	.557	.311	.124	1.792	.076
a. Dependent Variable: knowledge						

R Square =.626 Adjusted R Square =.584 Std. Error of the Estimate =2.00545

Regression analysis has been carried out to elicit the causal impact of socio-economic variables selected for the study on the consequent factor that is increase in knowledge level of the respondents. It has been found out that among the twelve variables, education, land holding pattern, media exposure, income and housing pattern were the variables which exhibit significant regressional impact on increase in knowledge level of the respondents.

The r square value being .626, it is to conclude that this conglomeration of socio-economic variable has attributed to 62.6% and had much influence in increasing knowledge level of the respondents.

To assess the extent of participation of the farm women in extension reforms activities under ATMA.

Interest and motivation

Table 4: Distribution of Respondents According as Per their Interest and Motivation

Category	Score	Frequency	Percentage
High	>19.084	6	5
Medium	16.716-19.084	78	65
Low	<16.716	36	30
Total		120	100

High = > mean score+S.D mean score = 17.900, S.D = 1.184
Medium = between mean score ± S.D
Low = < mean score – S.D

The above table represented the distribution of WIG members according to their interest and motivation. It was observed from the results only that 5 percent of the respondents had high level of interest and motivation, 65 percent of the respondents had medium level of interest and motivation and 30 percent of the respondents having low level of interest and motivation. The findings revealed that majority (65%) WIG members belonged to medium category of interest and motivation group. Low level of interest and motivation stands as a barrior for achieving ATMA goals. For developing high

interest and motivation among WIG members more number of awareness programme, demonstrations, exposure visits may be organised by the ATMA functionaries.

Distribution of respondents according to their decision making capacity

Table no 4.3.2 Decision making capacity

Category	Score	Frequency	Percentage
High	>17.695	0	0
Medium	15.555-17.695	72	60
Low	<15.555	48	40
Total		120	

High = > mean score+S.D mean score =16.625 S.D =1.070
Medium = between mean score ± S.D
Low = < mean score – S.D

The above table represents the decision making capacity of WIG members with regards to decision making capacity. 72 percent of the respondents belonged to medium decision capacity followed by 48 percent WIG members belonged to low decision making capacity whereas none of the respondents had high decision making capacity.

Decision making in Indian family condition women are not involved in decision making process as most of the families are male dominant however due to increased awareness and education might had positive impact on the WIG members to take medium level decisions on entrepreneurial activity carried out by ATMA project. The ATMA functionaries may take necessary steps to increase the decision making capacity of the WIG of farm women.

Distribution of respondents according to group cohesiveness

Table 5 Group Cohesiveness

Category	Score	Frequency	Percentage
High	>19.884	0	0
Medium	17.866-19.884	81	67.5
Low	<17.866	39	32.5
Total		120	100

High = > mean score+S.D mean score =18.875 S.D =1.009
Medium = between mean score ± S.D
Low = < mean score – S.D

As revealed from the above table that none of the members had high level of group cohesiveness, only 67.5 percent of the members had medium level of group cohesiveness and 32.5 percent had low level of group cohesiveness. Group cohesiveness is an important factor for maintaining unity of the group. So for increasing group cohesiveness of the group and its members they should know each other's working ability and conditions. They should be practically aware that unity is strength,

EXTENSION PARTICIPATION AND CONTACT

Extension contact is very important to any group or individual for its proper growth and development. Transfer of technology depends upon frequent contact with friends and neighbours. So it is expected that one must come in contact with extension agencies and friends and neighbours regularly.

Table 6: Distribution of respondents according to extension participation and contact

Category	Score	Frequency	Percentage
High	>9.32	12	10
Medium	7.53-9.32	45	37.5
Low	< 7.53	63	52.5
Total		120	100

High = > mean score+S.D mean score =8.425 S.D =0.895
Medium = between mean score ± S.D
Low = < mean score – S.D

As revealed from the table that 10 percent of the respondents had high level of extension participation and contact, followed by 37.5 percent had medium level of participation. Only 52.5 percent of the respondents had low level of participation. Extension participation and contact is an important factor for development but it is evident from the results that low level of participation is prevalent among respondents, to overcome this situation they should be aware about benefits of participation for their development. ATMA functionaries may encourage the WIG farm women to take part in various extension programmes/activities to enrich their knowledge and skills.

Table 7: Covariance analysis of extent of participation

Category	N	Minimum	Maximum	Mean	Std. error	Std. deviation	Cv%	Gap%
Interest and motivation	120	13	20	17.900	0.108	1.184	6.614	10.500
Decision making procedure	120	13	18	16.625	0.098	1.070	6.433	7.639
Group cohesiveness	120	17	20	18.875	0.092	1.009	5.345	5.625
Extension participation and contact	120	6	10	8.425	0.082	0.895	10.623	15.750

As revealed from the co-variance analysis greater consistency was observed in case of group cohesiveness and greater variability was observed in case of decision making procedure, interest and motivation and it is highest in case of extension participation and contact. Similarly gap percentage was more in case of extension participation and contact followed by interest and motivation. It is seen that greater amount of heterogeneity was observed among the respondents in case of extension participation and contact. So to reduce this gap ATMA functionaries should concentrate more on these matters for betterment of respondents.

Table 8: Correlation study of socio economic variables with extent of partcipation of respondents

SL NO	Variables	r value
1	Age	.051
2	Education	-.095
3	Fam.Type	-.107
4	Fam.Size	-.250**
5	Land Holding	-.163
6	Membership	.243**
7	Soc. Part	.302**
8	Cosmo	-.197*
9	Media	.225*

10	Housing Pat	.334**
11	Mater. Poss	.146
12	Income	.092

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

As revealed from the table age, education, family type, land holding pattern, material possession, income of respondents found to have no influence in extension participation and contact of respondents but Membership of social organisation, social participation, mass media exposure, housing pattern of the respondents exhibited positive and significant influence in extent of participation of respondents whereas family size and cosmopoliteness exhibited negative influence in extent of participation of respondents. So it is concluded that smaller size of family having less cosmopoliteness were the motivating factors for increasing the extent of participation of respondents

CONCLUSIONS

The present study was undertaken in Begunia block of Khodha district of Odisha to assess the development of Women Interest Group (WIG) members i.e. farm women. The response of WIG farm women towards the activities of ATMA will definitely enable the extension workers to assess their effectiveness under this programme. It was observed that many activities such as skill trainings, demonstrations, awareness campaighns, exposure visits were not satisfactorily performed by the ATMA functionaries for the general improvement of WIG farm women. The recommendation of complex technologies should be avoided. Care should be taken to overcome the problems to select the WIG by selecting women farmers from same socio-economic background in order to achieve group cohesiveness, group solidarity, interest and motivation among the members.

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